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10/776,515	02/12/2004	Donald J. Curry	117521	3669

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OLIFF & BERRIDGE, PLC.
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

SHIKHMAN, MAX

ART UNIT	PAPER NUMBER
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2609

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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OfficeAction27074@oliff.com
jarmstrong@oliff.com

Office Action Summary	Application No. 10/776,515	Applicant(s) CURRY ET AL.	
	Examiner Max Shikhman	Art Unit 2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/12/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 3 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/12/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>May 12, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because "*analyze to how*", line 2, should be replaced with --analyze how --.

Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities: On page 1, line 2, attorney docket numbers should be replaced with application numbers or patent numbers.

Appropriate correction is required.

Claim Objections

3. **Claims 8 and 17** are objected to because of the following informalities: Wrong grammar; "*a table which contains a list of blob identifications*" should be changed to either -- a table, which contains a list of blob identifications, -- or --a table that contains a list of blob identifications--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. **Claims 1, 2, 4-7, 9-13, 15, 16, 18-20** are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (PGPUB-DOCUMENT-NUMBER: 20040081355). As shown in Figures 7, 12, Takahashi discloses as follows:

() Regarding Claim 1:

a first comparator that compares an edge continuity value of a pixel of each line to edge continuity values of pixels within a first neighborhood of the pixel to generate compare results; and

(Edge vectors contain edge continuity, because they indicate strength and direction,

"[0055] FIG. 8 is a diagram illustrating how one of the edge vectors of FIG. 7 defines the edge strength and possible edge direction for a pixel;"

[0059] FIG. 12 is a flow diagram showing details of processing, executed using the edge strength and edge direction information derived in the flow diagram of FIG. 11, to determine those pixels of the color image which are located on actual edges.

Page 3, [0020] "...modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction. The moduli of the resultant set of edge vectors are then compared..."

[0056] "FIGS. 9A to 9D ... edge strength of an object pixel is compared with the respective edge strengths of pixels which are located adjacent."

[0119] "...three values of edge strength are compared, to determine if the edge strength MOD(x,y) of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.")

an assigner that assigns a blob identification of a blob to the pixel based on the compare results to associate the pixel with the blob.

(The edge is part of the blob; the edge encloses a blob.

Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge."

[0119] "...three values of edge strength are compared, to determine if the edge strength MOD(x,y) of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.")

() Regarding Claim 2:

The apparatus of claim 1, further comprising: a gradient parameter generator that generates a gradient parameter value for the pixel based on luminance and chroma values of a second neighborhood of the pixel; and

(The edge vector is a gradient parameter.

Page 3, [0020], "successively selecting each pixel to be processed, i.e., as the object pixel, and determining, for each of a plurality of possible edge directions, a vector referred to as an edge vector whose modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction.")

a quantizer that quantizes the gradient parameter value to set an edge continuity value of the pixel.

[[0020], "The moduli of the resultant set of edge vectors are then compared, and the edge vector having the largest modulus is then assumed to correspond to the most likely edge on which the object pixel may be located."

[0024] "all of the color information contained in the image can be utilized to perform edge detection".)

() Regarding Claim 4:

The apparatus of claim 1, wherein the first neighborhood of the pixel includes pixels within a line of the pixel and a line previous to the line of the pixel named a top line, the top line including pixels having positions in the top line that are aligned to positions of pixels of the line, a pixel in the top line having a corresponding position of the pixel being a top-adjacent pixel, a pixel to a left side of the top adjacent pixel being a top-left adjacent pixel, and a pixel to a left side of the pixel in the line being a left-adjacent pixel.

(The limitation, "a line", does not exclude a curved line or multiple lines intersecting the pixel at different angles. The limitation, "*first neighborhood of the pixel includes*" does not exclude a bottom line. The limitation, "*within a line of the pixel*" does not exclude curved lines; it only excludes lines that do not intersect the pixel.

Page 3, [0020] "selecting each pixel to be processed, i.e., as the object pixel, and determining, for each of a plurality of possible edge directions, a vector referred to as an edge vector whose modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction.")

() Regarding Claim 5:

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The apparatus of claim 2, wherein the second neighborhood of the pixel includes a window of pixels surrounding the pixel.

(Page 3, [0020] "two sets of pixels which are located on opposing sides of the object pixel")

() Regarding Claim 6:

The apparatus of claim 4, wherein the first comparator compares the edge continuity value of the pixel with the edge continuity value of a top-adjacent pixel and/or a left-adjacent pixel and/or a top-left adjacent pixel; and

(Edge vectors contain edge continuity, because they indicate strength and direction.

Page 3, [0020] "...modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction. The moduli of the resultant set of edge vectors are then compared...")

the assigner assigns the pixel a blob identification associated with the top-adjacent pixel or a blob identification associated with the top-left adjacent pixel or a blob identification associated with the left-adjacent pixel or a new blob identification or to a background plane based on the comparison of the edge continuity values.

(The edge is part of the blob.

Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.")

() Regarding Claim 7:

The apparatus of claim 6, wherein the assigner uses an action table to determine whether to assign the pixel the blob identification associated with the top-adjacent pixel or the blob identification associated with the top-left adjacent pixel or the blob identification associated with the left-adjacent pixel or the new blob identification or to the background plane, based on a pattern of the edge continuation values of the top-adjacent pixel, the top-left adjacent pixel and the left-adjacent pixel.

(Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.")

() Regarding Claim 8:

The apparatus of claim 1, wherein the apparatus outputs a table which contains a list of blob identifications associated with pixels of the current line.

([0186] FIG. 36 shows an example of a region image whose data are stored in the region data storage section 4. Labels such as "1" and "2" are attached to each of the pixels, as shown in the left side of FIG. 36. All of the pixels located within a specific region have the same label, i.e., there is a region containing only pixels having the label 1, a region containing only pixels having the label 2, and so on.)

() Regarding Claim 9:

A xerographic marking device incorporating the apparatus of claim 1.

(Claim 23, "The image recording method...")

Claim 45, "The image recording apparatus...")

() Regarding Claim 10:

A marking device incorporating the apparatus of claim 1.

(Page 1, [0012] “edge detection processing which is to be applied to an image such as satellite images or aerial photograph, for example to accurately and reliably extract the shapes of specific objects such as roads, buildings etc., from the image...”

Claim 23, “The image recording method...”

Claim 45, “The image recording apparatus...”)

() Regarding Claim 11:

A digital photocopier incorporating the apparatus of claim 1.

(Claim 23, “The image recording method...”

Claim 45, “The image recording apparatus...”)

() Regarding Claim 12:

A method, comprising: comparing an edge continuity value of a pixel of each line to edge continuity values of pixels within a first neighborhood of the pixel to generate compare results; and

(Edge vectors contain edge continuity, because they indicate strength and direction,

“[0055] FIG. 8 is a diagram illustrating how one of the edge vectors of FIG. 7 defines the edge strength and possible edge direction for a pixel;”

[0059] FIG. 12 is a flow diagram showing details of processing, executed using the edge strength and edge direction information derived in the flow diagram of FIG. 11, to determine those pixels of the color image which are located on actual edges.

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Page 3, [0020] "...modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction. The moduli of the resultant set of edge vectors are then compared..."

[0056] "FIGS. 9A to 9D ... edge strength of an object pixel is compared with the respective edge strengths of pixels which are located adjacent."

[0119] "...three values of edge strength are compared, to determine if the edge strength MOD(x,y) of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.")

assigning a blob identification of a blob to the pixel based on the compare results to associate the pixel with the blob.

(The edge is part of the blob; the edge encloses a blob.

Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge."

[0119] "...three values of edge strength are compared, to determine if the edge strength MOD(x,y) of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the

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image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.”)

() Regarding Claim 13:

The method of claim 12, further comprising: generating a gradient parameter value for the pixel based on luminance and chroma values of a second neighborhood of the pixel; and

(The edge vector is a gradient parameter.

Page 3, [0020], “successively selecting each pixel to be processed, i.e., as the object pixel, and determining, for each of a plurality of possible edge directions, a vector referred to as an edge vector whose modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction.”)

quantizing the gradient parameter value to set an edge continuity value of the pixel.

([0020], “The moduli of the resultant set of edge vectors are then compared, and the edge vector having the largest modulus is then assumed to correspond to the most likely edge on which the object pixel may be located.”

[0024] “all of the color information contained in the image can be utilized to perform edge detection”).)

() Regarding Claim 15:

The method of claim 12, wherein the first neighborhood of the pixel includes pixels within a line of the pixel and a line previous to the line of the pixel named a top line, the top line including pixels having positions in the top line that are aligned to positions of pixels of the line, a pixel in the top line having a corresponding position of the pixel being a top-adjacent pixel, a pixel to a left side of the top adjacent pixel being a top-left adjacent pixel, and a pixel to a left side of the pixel in the line being a left-adjacent pixel, the method further comprising: comparing

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the edge continuity value of the pixel with the edge continuity value of a top-adjacent pixel and/or a left-adjacent pixel and/or a top-left adjacent pixel;

(The limitation, "a line", does not exclude a curved line or multiple lines intersecting the pixel at different angles. The limitation, "*first neighborhood of the pixel includes*" does not exclude a bottom line. The limitation, "*within a line of the pixel*" does not exclude curved lines; it only excludes lines that do not intersect the pixel.

Page 3, [0020] "selecting each pixel to be processed, i.e., as the object pixel, and determining, for each of a plurality of possible edge directions, a vector referred to as an edge vector whose modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction.")

assigning the pixel to a blob identification associated with the top-adjacent pixel or to a blob identification associated with the top-left adjacent pixel or a blob identification associated with the left-adjacent pixel or a new blob identification or to a background plane based on the comparison of the edge continuity values.

(Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.")

() Regarding Claim 16:

The method of claim 15, further comprising: using an action table to determine whether to assign the pixel the blob identification associated with the top-adjacent pixel or the blob identification associated with the top-left adjacent pixel or the blob identification associated with

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the left-adjacent pixel or the new blob identification or to the background plane based on a pattern of the edge continuation values of the top-adjacent pixel, the top-left adjacent pixel and the left-adjacent pixel.

(Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.")

() Regarding Claim 17:

The method of claim 12, further comprising: outputting a table which contains a list of blob identifications associated with pixels of the current line.

[[0186] FIG. 36 shows an example of a region image whose data are stored in the region data storage section 4. Labels such as "1" and "2" are attached to each of the pixels, as shown in the left side of FIG. 36. All of the pixels located within a specific region have the same label, i.e., there is a region containing only pixels having the label 1, a region containing only pixels having the label 2, and so on.)

() Regarding Claim 18:

A blob identifier, comprising: means for comparing an edge continuity value of a pixel of each line to edge continuity values of pixels within a first neighborhood of the pixel to generate compare results; and

(Edge vectors contain edge continuity, because they indicate strength and direction,

"[0055] FIG. 8 is a diagram illustrating how one of the edge vectors of FIG. 7 defines the edge strength and possible edge direction for a pixel;"

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[0059] FIG. 12 is a flow diagram showing details of processing, executed using the edge strength and edge direction information derived in the flow diagram of FIG. 11, to determine those pixels of the color image which are located on actual edges.

Page 3, [0020] "...modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction. The moduli of the resultant set of edge vectors are then compared..."

[0056] "FIGS. 9A to 9D ... edge strength of an object pixel is compared with the respective edge strengths of pixels which are located adjacent."

[0119] "...three values of edge strength are compared, to determine if the edge strength $MOD(x,y)$ of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.")

means for assigning a blob identification of a blob to the pixel based on the compare results to associate the pixel with the blob.

(The edge is part of the blob.

Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.")

() Regarding Claim 19:

The blob identifier of claim 18, wherein the means for assigning further comprises: table means for determining whether to assign the pixel to the blob identification associated with the top-adjacent pixel or the blob identification associated with the top-left adjacent pixel or the blob identification associated with the left-adjacent pixel or the new blob identification or to a background plane based on the pattern of the edge continuation values of the top-adjacent pixel, the top-left adjacent pixel and the left-adjacent pixel.

(The edge is part of the blob.

Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.")

() Regarding Claim 20:

A storage medium storing a set of program instruction executable on a data processing device,

(Page 6, [0095], "color image data storage section 1 which stores the data of a color image that is to be subjected to image recognition processing, an image recognition processing section 2 which performs the image recognition processing of the color image data, and a shape data storage section 3 which stores shape data expressing an edge image, which have been derived by the image recognition processing section 2."

Storage is done with software. An image is stored as a code.)

the set of program instructions comprising: instructions for comparing an edge continuity value of a pixel of each line to edge continuity values of pixels within a first neighborhood of the pixel to generate compare results; and

(Edge vectors contain edge continuity, because they indicate strength and direction,

"[0055] FIG. 8 is a diagram illustrating how one of the edge vectors of FIG. 7 defines the edge strength and possible edge direction for a pixel;"

[0059] FIG. 12 is a flow diagram showing details of processing, executed using the edge strength and edge direction information derived in the flow diagram of FIG. 11, to determine those pixels of the color image which are located on actual edges.

Page 3, [0020] "...modulus indicates an amount of color difference between two sets of pixels which are located on opposing sides of the object pixel with respect to that edge direction. The moduli of the resultant set of edge vectors are then compared..."

[0056] "FIGS. 9A to 9D ... edge strength of an object pixel is compared with the respective edge strengths of pixels which are located adjacent."

[0119] "...three values of edge strength are compared, to determine if the edge strength MOD(x,y) of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.")

instructions for assigning a blob identification of a blob to the pixel based on the compare results to associate the pixel with the blob.

(The edge is part of the blob; the edge encloses a blob.

Page 3, [0020] "Subsequently, it is judged that the object pixel is actually located on its presumptive edge if it satisfies the conditions that:

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[0021] (a) its edge strength exceeds a predetermined minimum threshold value, and

[0022] (b) its edge strength is greater than the respective edge strength values of the two pixels which are located immediately adjacent to it, on opposing sides with respect to the direction of that presumptive edge.”

[0119] “...three values of edge strength are compared, to determine if the edge strength $MOD(x,y)$ of the object pixel is greater than the edge strengths of both these adjacent pixels. If so, then the pixel which corresponds in position to the object pixel within the image expressed by the shape data (i.e., the edge image) is specified as being located on an actual edge.”)

Allowable Subject Matter

6. **Claims 3 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. This is a statement of reasons for allowable subject matter.

Claim 3 would be allowable because the prior art does not disclose, “gradient parameter generator is a grayscale selector generator that includes a second comparator that compares luminance values of pixels within the second neighborhood of the pixel to output a maximum luminance value and a minimum luminance value of the second neighborhood, the second comparator further outputs first chroma values and second chroma values that correspond to a location of the respective maximum luminance and minimum luminance values, wherein a dependent maximum value is a combination of the first chroma values and the maximum luminance value, and a dependent minimum value is a combination of the second chroma values and the minimum luminance value; the grayscale selector generator generating a

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grayscale selector value based on the dependent maximum value and the dependent minimum value" along with other limitations in the claim.

Claim 14 would be allowable because the prior art does not disclose, "comparing luminance values of pixels within the second neighborhood of the pixel to output a maximum luminance value and a minimum luminance value of the second neighborhood; further outputting first chroma values and second chroma values that correspond to a location of the respective maximum luminance value and the minimum luminance value, wherein a dependent maximum value is a combination of the first chroma values and the maximum luminance value and a dependent minimum value is a combination of the second chroma values and the minimum luminance value; generating a grayscale selector value based on the dependent maximum value and the dependent minimum value", along with other limitations in the claim.

Conclusion

8. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawano (APPL-NO: 10/289981) discloses, "Feature extracting method, subject recognizing method and image processing apparatus".

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Max Shikhman whose telephone number is (571) 270-1669. The examiner can normally be reached on Monday-Friday 7:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Max Shikhman
4/1/2007

A handwritten signature in black ink, appearing to read "Shuwang Liu".

SHUWANG LIU
SUPERVISORY PATENT EXAMINER